

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

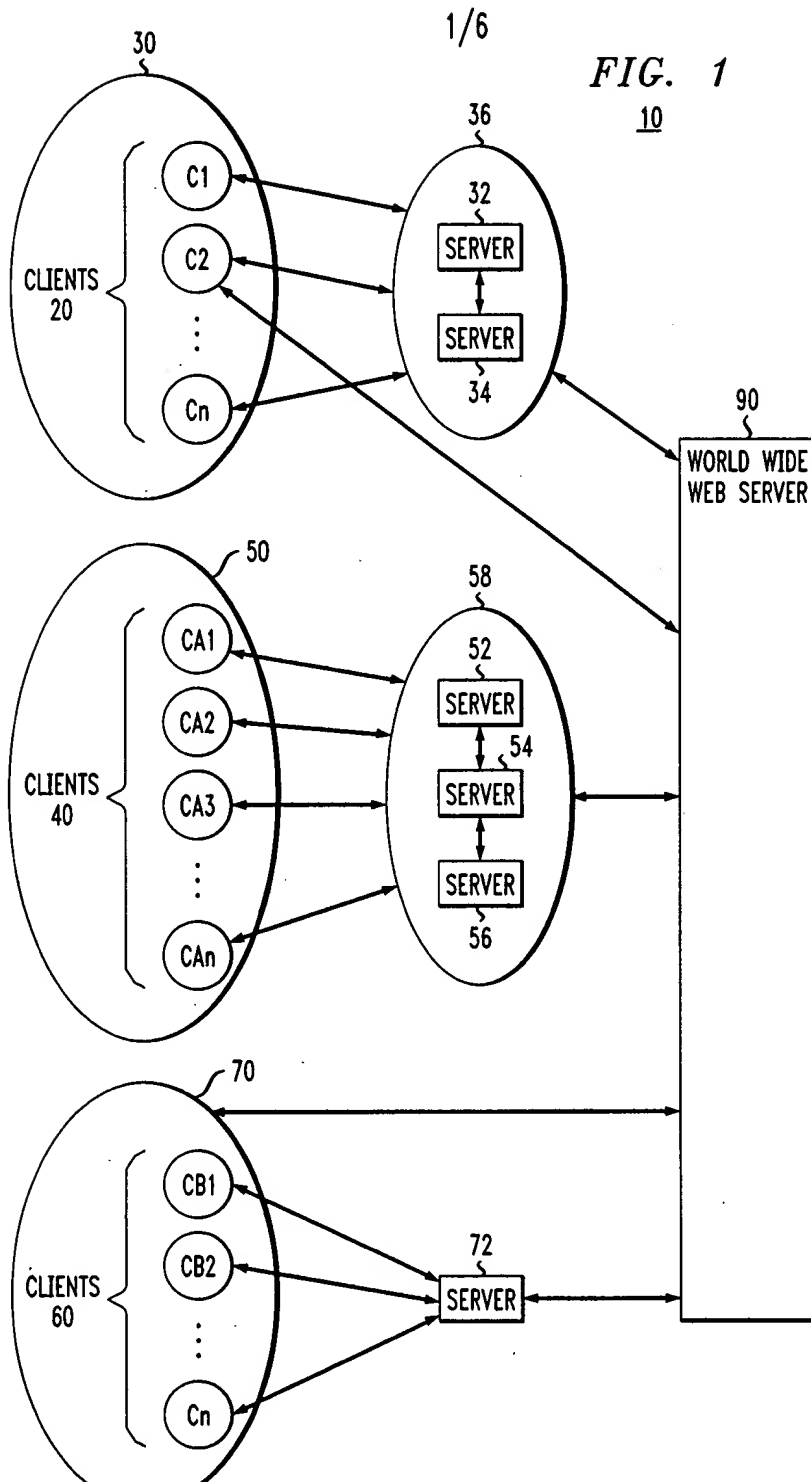
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

FIG. 1
10

2/6

FIG. 2

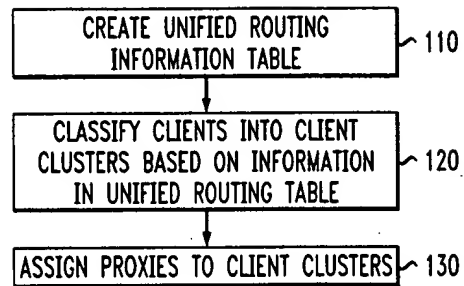


FIG. 3

160

ROUTES		AS PATH
134.87.2.0/24	BCnet	6509 271
134.117.0.0	CARLETON UNIVERSITY	6509 10786
137.82.0.0	UNIVERSITY OF BRITISH COLUMBIA	6509 271
137.122.0.0	UNIVERSITY OF OTTAWA	6509 10786

170 180 190

FIG. 4

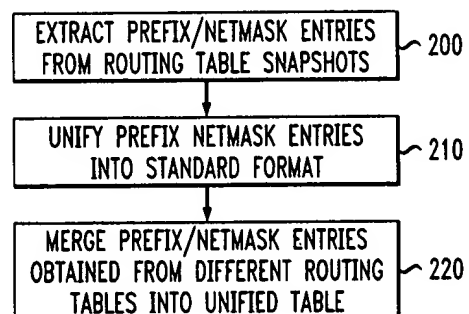


FIG. 5

3/6

	230	240	250
FORMATS	x1.x2.x3.x4/k.1k.2k.3k.4	x1.x2.x3.x4/1	x1.x2.x3.0
ROUTING TABLES	MAE-EAST MAE-WEST PACBELL PAIX	ARIN AT&T CANET NLNR VBNS	CANET
EXAMPLES	193.1/255.255 193.0.128/255.255.192	128.148.0.0/16	130.15.0.0
UNIFICATION	193.1/255.255 193.0.128/255.255.192	128.148.0.0/255.255	130.15.0.0/255.255 197.75.72/255.255.255

FIG. 6

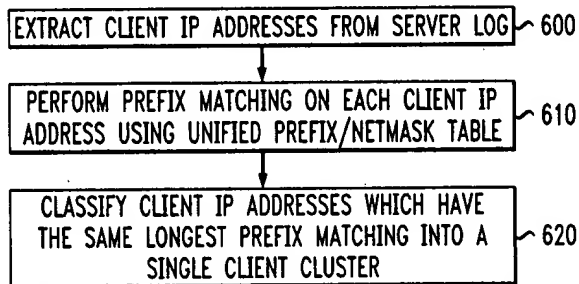


FIG. 7

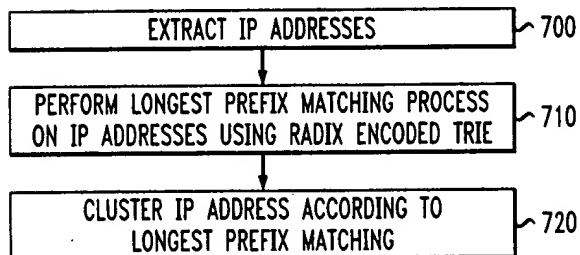
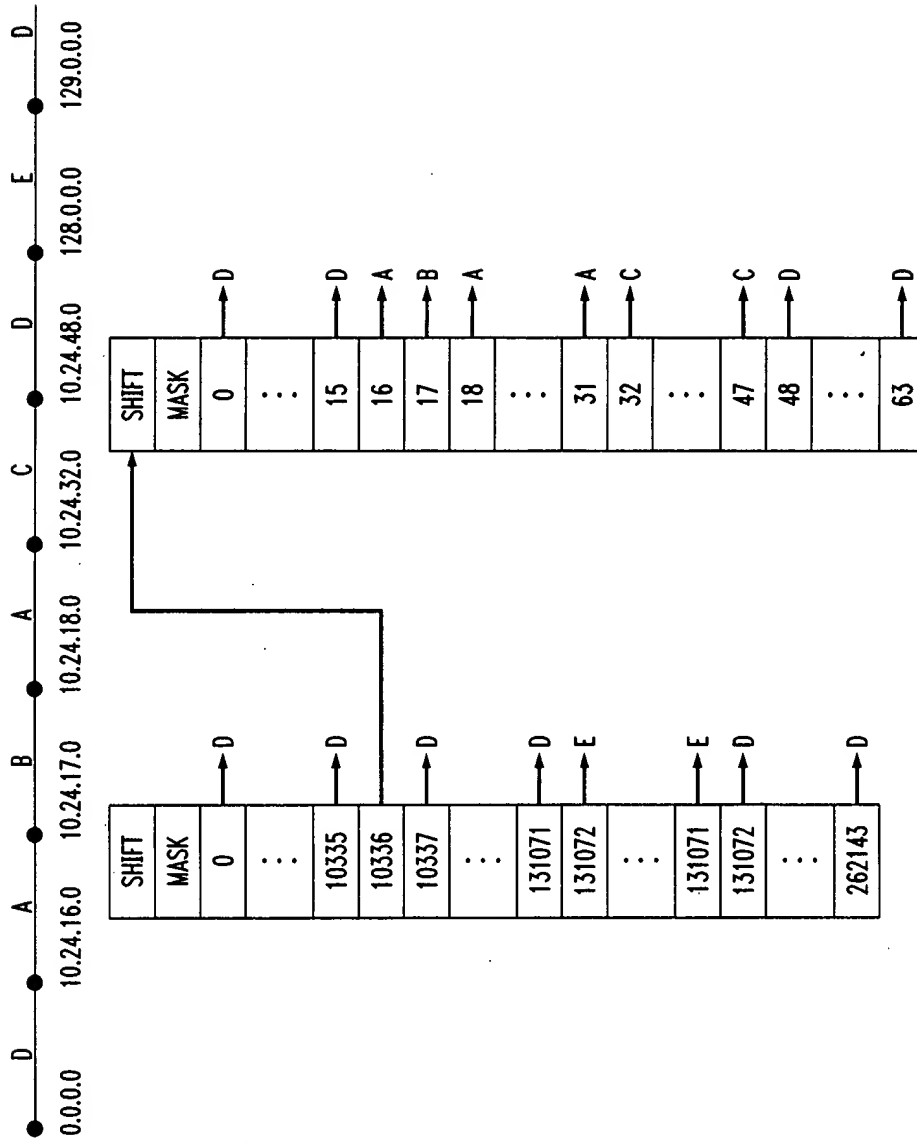


FIG. 8



5/6

FIG. 9a

matching code for the <S, R, H> values generated by the first part of the algorithm

```

/*
 * multi-level retrieve longest prefix match
 *
 * input arguments:
 *
 *   S   top level shift
 *   R   retrieve internal nodes
 *   H   retrieve leaf nodes (next hop index)
 *   addr IP address to match
 *
 * return:
 *
 *   0   no match
 *   >0  next hop index
 */

int
lpmatch (uint8 S, uint32* R, uint8* H, uint32 addr)
{
    uint32    b;
    uint32    x;

    x = R [addr >> S];
    while (b = >> 27)
    {
        b = (x & (((1<<26) -1)) + ((addr>>(S-b)) & (1<<b) -1));
        if (x & (1<<26))
        {
            x = H[b];
            break;
        }
        x = R[b];
    }
    return x;
}

```

6/6

FIG. 9b

```

/*
 * 2-level retrie longest prefix match
 *
 * input arguments:
 *
 *   S    top level shift
 *   R    retrie internal nodes
 *   H    retrie leaf nodes (next hop index)
 *   addr  IP address to match
 *
 * return:
 *
 *   0    no match
 *   >0   next hop index
 */

int
lpmatch (uint8 S, uint32* R, uint8* H, uint32 addr)
{
    uint32    x;

    x = R [addr >> S];
    return H[(x & ((1<<26)-1)) + ((addr & ((1<<S) -1)) >> (S - (x>>27)))]];
}

```